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NATIONAL TRANSPORTATION SAFETY BOARD  
DEPARTMENT OF TRANSPORTATION  
WASHINGTON, D.C. 20591

DEC 27 1968

A68-37

Honorable David D. Thomas  
Acting Administrator  
Federal Aviation Administration  
Department of Transportation  
800 Independence Avenue, S. W.  
Washington, D. C. 20590

Dear Mr. Thomas:

Our recent investigation involving turbine disintegration on the No. 1 JT3-D-3B engine on the American Airlines Boeing 707, N7599A, disclosed strong evidence of an oil scavenge and/or pressure line failure.

On November 19, 1968, American Airlines Flight 29 had taken off from Friendship International Airport at Baltimore, Maryland, for a non-stop trip to Los Angeles. While climbing through flight level 290, one of the cabin attendants alerted the flight crew of a fire in No. 1 engine. Immediately subsequent to this warning, a violent explosion occurred. A successful emergency descent and landing was accomplished at Dulles International Airport.

The aircraft hydraulic system had been depleted of fluid requiring manual emergency extension of the landing gear and operation of the aircraft without outboard spoilers. Fluid depletion had resulted from shrapnel penetration of hydraulic plumbing in the No. 2 pylon. The No. 1 main fuel tank, a wide spread area of the left hand side of the fuselage, as well as the underside of the entire left wing between No. 1 and No. 2 pylons sustained penetration damage.

The fire which had occurred in flight did not spread to the penetrated area of the No. 1 fuel tank and was consequently under control when No. 1 engine shut-down was completed.

The type of failure similar to that seen in this case has occurred in varying degrees approximately 300 times, in most cases with less disastrous results.

Honorable David D. Thomas (2)

Corrective action to alleviate the problem of oil pressure and scavenge line failures to No. 6 bearings of the subject Pratt and Whitney engine has been formulated in the form of an alert letter (No. 41), dated April 24, 1968, by the manufacturer to the operators. This action, although corrective in nature, is not mandatory nor binding. In addition, the manufacturer may not be capable of logistically supporting a full scale rework program at this time.

In view of the catastrophic potential of this type of failure, it is recommended that regulatory action be initiated on an urgent and expedited basis, requiring mandatory compliance with the improvements outlined in the manufacturer's alert letter. In the interim, consideration should be given to requiring a rigid maintenance and flight monitoring activity in an effort to detect impending separation of the subject oil tubes.

The areas of our concern were discussed with personnel of your Flight Standards Service (EA-210) by our Bureau of Aviation Safety.

Please feel free to contact us if further information is desired.

Sincerely yours,

Original signed by

Joseph J. O'Connell, Jr.

Joseph J. O'Connell, Jr.  
Chairman